



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

1595 Wynkoop Street  
Denver, CO 80202-1129  
Phone 800-227-8917  
[www.epa.gov/region08](http://www.epa.gov/region08)

**JUL 29 2015**

Ref: EPR- IO

Mary Jo Rugwell  
Acting State Director  
U.S. Bureau of Land Management  
5353 Yellowstone Road  
Cheyenne, Wyoming 82003-1828

Dear Ms. Rugwell:

I am writing in response to your letter dated June 23, 2015. Your letter requests that the U.S. Environmental Protection Agency provide a description of our remaining concerns regarding the Pinedale Anticline Project Area (PAPA) Groundwater Pollution Protection, Monitoring, and Response Action Plan, herein referred to as the Groundwater Monitoring Plan, and identify recommendations to resolve these concerns.

As you indicate in your letter, the EPA has provided technical advice, support and commentary to BLM as part of the inter-agency group charged with providing input in the development of the plan. In addition to actively participating in work group discussions, the EPA has provided numerous sets of written comments throughout the process of developing the interim products and ultimately the draft plan. Our technical representative, Andrew Schmidt, has articulated on behalf of the EPA those concerns that he felt were significant in moving toward a scientifically sound end product. The EPA's remaining significant concerns regarding the Groundwater Monitoring Plan were last detailed in a May 7, 2015 email from the EPA to BLM responding to a similar request to clarify unresolved or outstanding issues. Those issues are reiterated below.

- The Groundwater Monitoring Plan does not meet the objective of confirming the current hydrogeologic conceptual site model (CSM). The EPA has raised concerns about the uncertainties associated with the CSM prior to issuance of the Final Numerical Modeling Report (letter dated April 3, 2013) and the Final Evaluation of Potential Sources of Low-Level Petroleum Hydrocarbon Compounds Detected in Groundwater Report (letter sent June 13, 2013). The EPA again raised this issue in the discussion of the plan's goals and objectives, urging that BLM attempt to address those uncertainties by including a monitoring goal for further assessment and confirmation or refinement of the CSM. The objective to confirm the hydrogeologic CSM was incorporated into objective O2.10 which states: "Establish a review cycle for the Review Team to evaluate the effectiveness and continued relevance and appropriateness of sampling constituents, methods, thresholds, and the existing hydrogeologic conceptual model." Confirmation of the CSM is critical in that the CSM provides the basic conceptual framework behind how groundwater behaves in the anticline and therefore provides the foundation for how to best monitor groundwater along the anticline. Although the plan initially articulates the need for reevaluation of the CSM in the objective, the design selected (particularly the lack of nested wells at varying depths) does not lend itself to the collection

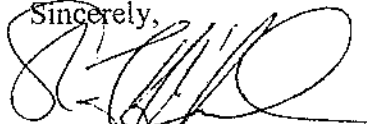
of useful data for confirmation or modification of the CSM. As a result, we continue to be concerned that this issue will not be addressed through the implementation and annual review process.

- The scientific defensibility of the monitoring network presented by the plan would be improved by the inclusion of a clear discussion of possible pollutant sources, and a description of how the monitoring network is designed to detect releases from those potential sources along the anticline. The Groundwater Monitoring Plan articulates several objectives regarding groundwater monitoring of potential sources and the need for adequate spatial coverage. The proposal to install several new wells screened in first encountered groundwater suggests a focus on surface sources in the anticline, but this is not explicitly stated in the Groundwater Monitoring Plan. Given that previous reports articulate the CSM of natural upward migration of hydrocarbons from the production zone, it is essential to include wells screened at deeper depths as well as wells screened at shallow depths to evaluate potential sourcing of contaminants from surface activities and the production zone, and to help confirm the current CSM.
- The only deeper monitoring points identified for continued monitoring in the Groundwater Monitoring Plan are industrial water wells that are not suitably constructed for groundwater monitoring purposes. The plan identifies two objectives, Objectives O2.1 and O2.10, that address the suitability of sampling methods in relation to standard environmental practice. The long screened intervals and high volume production limit the ability of industrial water wells to detect low concentrations of constituents potentially released from oil and gas production at the surface or from depth due to the extensive dilution inherent in operation of these wells. This concern is exacerbated by the incorporation of sampling methodologies (pumps) that may negatively influence the retention of volatile organic analytes in groundwater samples. As such we remain concerned that the use of water supply wells as deeper groundwater monitoring points in the Groundwater Monitoring Plan will not meet the plan's objectives.

The EPA believes that in order for the Groundwater Monitoring Plan to achieve its objectives, the issues identified above need to be meaningfully addressed in the Final Groundwater Monitoring Plan. The EPA has identified these concerns during the development of the monitoring approach (email from the EPA to BLM dated October 23, 2014), during the formal comment period (email from EPA to BLM dated January 23, 2015) and in follow-up discussions (email from the EPA to BLM dated May 7, 2015).

The EPA appreciates the opportunity to have provided input to the BLM in its development of the interim products and the Groundwater Monitoring Plan for the anticline. The issues described above remain significant concerns that the EPA has communicated throughout the process in an effort to best support BLM's decision process. If you need any further information, or would like to discuss, please do not hesitate to contact me, or have your staff contact Ayn Schmit at (303) 312-6220 or by email: [schmit.ayn@epa.gov](mailto:schmit.ayn@epa.gov), or Andrew Schmidt at (303) 312-6283, or by email: [schmidt.andrew@epa.gov](mailto:schmidt.andrew@epa.gov).

Sincerely,



Shaun L. McGrath  
Regional Administrator

Cc: Todd Parfitt, Wyoming DEQ